

**Claims:**

1. A method for cleaning a bevel of a semiconductor substrate, comprising:  
rotating the semiconductor substrate on a substrate support member;  
dispensing an etching solution onto the bevel of a production surface of the substrate with a first pivotally mounted fluid dispensing nozzle; and  
dispensing a protective fluid onto a central portion of the production surface simultaneously with the dispensing of the etching solution with a second pivotally mounted fluid dispensing nozzle.
2. The method of claim 1, wherein the etching solution is at least one of hydrochloric acid, sulfuric acid, and combinations thereof.
3. The method of claim 1, wherein the protective fluid comprises deionized water.
4. The method of claim 1, wherein dispensing the protective fluid comprises dispensing deionized water at a rate of between about 1 fluid drop every three seconds to about 1 fluid drop every second.
5. The method of claim 4, wherein rotating the substrate comprises rotating between about 2500 rpm and about 4000 rpm.
6. The method of claim 1, wherein the process of dispensing the protective fluid terminates less than about one second after the dispensing of the etching solution begins.
7. The method of claim 1, wherein dispensing the etching solution comprises dispensing between about 0.25L/min and about 2.5L/min for between about 3 seconds and about 10 seconds.

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8. The method of claim 7, wherein rotating the substrate comprises rotating at between about 100 rpm and about 300 rpm.
9. The method of claim 1, comprising dispensing deionized water onto a backside of the substrate during the dispensing of the etching solution.
10. A method for removing unwanted metal deposits from the bevel edge of a semiconductor substrate, comprising:
  - securing a substrate to a rotatable substrate support assembly;
  - rotating the substrate at a rate of between about 2500 rpm and about 4000 rpm;
  - dispensing a protective fluid onto a production surface of the substrate at a rate of between about 1 drop every 3 seconds to about 1 drop every second; and
  - dispensing an edge bead removal solution onto a bevel edge of the production surface simultaneously with the dispensing of the protective fluid.
11. The method of claim 10, wherein securing the substrate comprises:
  - centering the substrate between 3 rotatable centering posts; and
  - positioning the substrate onto a rotatable vacuum chuck.
12. The method of claim 10, wherein dispensing the protective fluid comprises positioning a pivotally mounted fluid dispensing arm above a central portion of the substrate and dispensing the protective fluid onto the central portion of the substrate from a fluid aperture positioned on a distal end of the fluid dispensing arm.
13. The method of claim 12, wherein the protective fluid comprises deionized water.
14. The method of claim 10, wherein dispensing the edge bead removal solution comprises positioning a fluid dispensing nozzle extending from a distal end of a

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pivotaly mounted etchant dispensing arm above the bevel edge of the substrate and dispensing the edge bead removal solution from the nozzle onto the bevel edge.

15. The method of claim 14, wherein the edge bead removal solution comprises at least one of  $\text{H}_2\text{SO}_4$  and  $\text{H}_2\text{O}_2$ .

16. The method of claim 13, wherein the step of dispensing the deionized water onto the production surface of the substrate is terminated after the protection layer is formed and the dispensing of the etchant solution is continued.

17. A method for cleaning a bevel and exclusion zone of a semiconductor substrate, comprising:

positioning the substrate on a rotatable vacuum chuck;

rotating the vacuum chuck substrate;

dispensing deionized water onto a central portion of the semiconductor substrate at a flow rate of between about 1 drop every 3 seconds and about 10 drops a second; and

dispensing an edge bead removal solution onto an exclusion zone of the semiconductor substrate during the dispensing of the deionized water.

18. The method of claim 17, wherein rotating the substrate comprises rotating the vacuum chuck at between about 2500 rpm and about 3500 rpm.

19. The method of claim 18, wherein the step of dispensing the deionized water is terminated once a protection layer is formed on the semiconductor substrate.

20. The method of claim 19, wherein the protection layer has a thickness of up to about 150 Å.

21. The method of claim 17, wherein the step of dispensing the deionized water is continued through the step of dispensing the edge bead removal solution.

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22. The method of claim 21, wherein the edge bead removal solution comprises at least one of hydrochloric acid and sulfuric acid.

23. The method of claim 17, wherein dispensing deionized water onto a central portion of the semiconductor substrate comprises positioning a first terminating end of a first pivotally mounted fluid dispensing arm over the central portion of the substrate, and wherein dispensing an edge bead removal solution onto an exclusion zone of the semiconductor substrate comprises positioning a second terminating end of a second pivotally mounted fluid dispensing arm over the exclusion zone of the substrate.

24. The method of claim 23, wherein the edge bead removal solution is dispensed at a rate of between about 1L/min and about 2.5L/min and for a duration of between about 3 seconds and about 10 seconds.